



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/491,569	01/26/2000	Vinod Jayaraman	NTTC-0002-US	8704

7590 06/08/2004

Fred G Pruner Jr
Trop Pruner Hu & Miles PC
8554 Katy Freeway Suite 100
Houston, TX 77024

EXAMINER

PATEL, AJIT

ART UNIT	PAPER NUMBER
----------	--------------

2664

DATE MAILED: 06/08/2004

5

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

09/491,569

Applicant(s)

JAYARAMAN ET AL.

Examiner

AJIT G. PATEL

Art Unit

2664

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 27 September 2003.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-37 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-37 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2664

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. Claims 1-15,17-19,24-28,30,31,32,34-37 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah (of the record) in view of Dahlin et al (newly cited Pat. # 5,420,864).

- Referring to claims 1, 24, 31,35-37, Chuah discloses a method usable with a wireless medium and local stations (see figure 2 - end systems 232 and wireless network 230), as well as a system with local stations and a central authority (see figure 2 - end systems 232 and base stations 236) comprising:

- o communicating a request between one of the local stations and a central authority to reserve a time slot for transmitting from said one of the local stations (sending transmit access request to base station for reservation of time slots, col. 9 lines 54-64);
- o. using the central authority to selectively reserve the time slot based on at least in part a reservation schedule (requests are sent to scheduler, col. 10 lines 2326).

Chuah fails to disclose the central authority transmitting data to other stations to prevent the other local stations from transmitting in response to the beginning of the time slot. Dahlin et al disclose a method for random access in a time divided mobile radio system comprising the central authority transmitting data to other stations to prevent the other local stations from transmitting in response to the beginning of the time slot (lines 48-60 which imply that the flag (data or vector) indicates that the time slot is reserved for a specific mobile station so that the other stations can not use that time slot. In other word it prevents other stations from transmitting).

- Referring to claim 5, Chuah further discloses the method of claim 1, wherein the local stations and the central authority form at least part of a wireless local area network (base station with end systems and a wireless local network, see figure 2 - end systems 232 and wireless network 230).
- Referring to claims 6 and 26, Chuah further discloses the method and system of claims 1 and 24, wherein communicating the request comprises: transmitting a reservation frame between said one of the local stations and the central authority (transmitting a mini-slot frame to send reservation request to base station, col. 9 lines 9-13 and figure 4).

Art Unit: 2664

-Referring to claims 9-14, Chuah further discloses the method of claim 1, wherein the central authority bases reservation of the time slot at least in part on underlying network properties, characteristics of the traffic to be transmitted, bandwidth already reserved for other stations, or on a policy associated with one of the stations (col. 10 lines 8-11). With respect to claims 10 and 12, the allocation based on traffic characteristics disclosed by Chuah is interpreted as allocation based on throughput.

-Referring to claim 15, Chuah further discloses the method of claim 1, further comprising: communicating between the central authority and said one of the local stations to indicate acceptance or refusal of the request (success or collision, col. 5 lines 7-14, col. 17 lines 35-38).

-Referring to claims 17, 30, and 34, Chuah discloses the method, system, and article of claims 1, 24, and 31, and communicating the reservation request with the central authority and another central authority that is associated with another cell (through mobile switching center, col. 9 lines 4-12), wherein the selective reservation by the first central authority is further based at least in part on the reservation schedule maintained by the first central authority (requests are sent to scheduler, col. 10 lines 23-26).

- Referring to claims 18 and 19, Chuah further discloses the method of claim 1, where the central authority can cancel the reserved time slot based on whether said one of the local stations did not transmit during a previously scheduled time slot (col. 20 lines 62-65).

- Referring to claims 2-4, 25, and 32, Chuah discloses the method, system, and article of claims 1, 24, and 31, where the system is able to transmit constant bit rate information (col. 4 lines 55-56, col. 10 lines 34-46), but does not explicitly disclose the transmission of real-time information, including audio and video, from one of the local stations during the timeslot. However, it is well known in the art that constant bit rate information includes real time voice and video traffic. Therefore, at the time the invention was made, it would have been obvious to a person of ordinary skill in the art to transmit real-time information, including audio and video. One of ordinary skill in the art would have been motivated to do this so that there is no perceived delay in the voice and video traffic.

- Referring to claims 7-8 and 27-28, Chuah discloses the method and system of claims 6 and 26, and further discloses that the base station receives priority (priority based on connection identity, col. 12 lines 54-55, col. 17 lines 47-52), start time (start time established by base station when

reservation is received, col. 14 lines 48-57), and traffic type information (data type field, col. 17 lines 54-58) Chuah does not explicitly disclose that all these are indicated in the reservation frame. Chuah discloses a short upstream reservation frame followed by a longer upstream acknowledgment frame containing more information. It is well known in the art that reservation frames can contain many kinds of information. One scenario would be to put the information contained in both frames (reservation and acknowledgment) together into one reservation frame. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to indicate a priority, start time, and traffic type in the reservation frame. One of ordinary skill in the art would have been motivated to do this so that the time slot can be reserved immediately without waiting for the local station to transmit more information thereby improving performance.

3. Claims 16,21-23,29, and 33 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah and Dahlin et al as applied to claim 1-15,17-19,24-28,30,31,32,34-37 above, and further in view of Belanger et al (of the record, Pat. # 5,875,186).

Art Unit: 2664

- Referring to claims 16, 29, and 33, Chuah and Dahlin et al discloses the method, system, and article of claims 1, 24, and 31, where the central authority notifies the local stations of a busy time slot (sends broadcast, col. 5 lines 16-18), but does not explicitly disclose that the central authority updates a network allocation vector of each local station with the duration of the time slot. Belanger discloses a wireless local area network where local stations have a network allocation vector which indicates the availability of the access channel (net allocation vector, col. 33 lines 26-42). This technique can be used in the system disclosed by Chuah and Dahlin et al since the central authority notifies the local stations with the availability of the access channel. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to transmit a frame from the central authority that updates a network allocation vector of each local station indicating the availability of the time slot. One of ordinary skill in the art would have been motivated to do this so that the system would work well in overlapping service areas. Referring to claims 21-23, Chuah and Dahlin et al discloses the method of claim 1, wherein at least some of the local stations are located within a cell that includes multiple access points (see figure 2 - 236), but does not explicitly disclose using the central

authority to route the traffic through the one of the access points that has the least amount of existing traffic. Belanger discloses a wireless local area network where the mobile unit uses the best access point by using the information received from the access point (col. 2 lines 20-56). This could be implemented in the system disclosed by Chuah and Dahlin et al so that the local station can use access point with the best service quality. At the time the invention was made, it would have been obvious to a person of ordinary skill in the art to route the traffic through the one of the access points that has the least amount of existing traffic. One of ordinary skill in the art would have been motivated to do this so that the system will have a higher quality of service.

4. Claim 20 is rejected under 35 U.S.C. 103(a) as being unpatentable over Chuah and Dahlin et al as applied to claim 1-15,17-19,24-28,30,31,32,34-37 above, and further in view of Egawa et al (of the record, Pat. # 5,745,694).

- Referring to claim 20, Chuah and Dahlin et al discloses that the central authority is able to cancel the reserved time slot (see rejection to claims 18 and 19), but does not explicitly disclose that the cancellation takes

Art Unit: 2664

place after the local station transmits a cancellation request. Egawa discloses that a user can cancel a reservation request that was already granted (col. 7 lines 7-10). Since the system disclosed by Chuah and Dahlin et al can already cancel reserved time slots, it would have been obvious to a person of ordinary skill in the art, at the time the invention was made, to allow the end user to submit cancellation requests. One of ordinary skill in the art would have been motivated to do this so that a timeslot would not be wasted in case the user changes his/her mind about the granted reservation.

5. Applicant's arguments with respect to claims 1-37 have been considered but are moot in view of the new ground(s) of rejection.

6. Applicant's amendment necessitated the new ground(s) of rejection presented in this Office action. Accordingly, **THIS ACTION IS MADE FINAL**. See MPEP § 706.07(a). Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire **THREE MONTHS** from the mailing date of this action. In the event a

Art Unit: 2664

first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the date of this final action.

7. Any inquiry concerning this communication or earlier communications from the examiner should be directed to AJIT G. PATEL whose telephone number is 703-308-5347. The examiner can normally be reached on MONDAY-THURSDAY.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wellington Chin can be reached on 703-305-4366. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Art Unit: 2664

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AP


Ajit Patel
Primary Examiner